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*PASSIFLORA MAYARUM*,  
A NEW SPECIES RELATED  
TO *P. PROLATA* IN  
SUBGENUS *PASSIFLORA*  
(PASSIFLORACEAE)

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Collections from Central America made since the time of Killip's (1938) monumental monograph of the American Passifloraceae have allowed a clearer delineation of a number of taxa, and in some cases have confirmed his suspicions that certain specimens might represent undescribed species. Such is the case with *Passiflora prolata* Masters and its apparent sister species newly described here.

***Passiflora mayarum*** MacDougal, sp. nov. TYPE: Mexico. Quintana Roo: roadside secondary scrub 3 km N of San José de la Montaña on road N of Tomás Garrido (ca. 75 km W of Chetumal), 100 m, 9 May 1982, *Chater et al.* 89 (holotype, MO; isotype, BM). Figures 1A, C, 2.

*Passiflora* (subgenus *Passiflora*) scandens, puberula, trichomatibus 0.05–0.25 mm longis; stipulae 10–22 × 0.4–1.0 mm; petioli 2(–4)-glandulosi; folia trilobata, lobis acuminatis vel caudatis, marginibus serratis vel serrulatis; bracteae 4.8–6.6 × 2.0–3.4 cm, ovato-ellipticae, acuminatae; coronae filamenta 6–8-seriata; operculum ad apicem in lacinias divisum; ovarium glabrum vel raro puberulum. *Passiflora prolata* affinis est.

Vine, size unknown, puberulent throughout except glabrous or nearly so on tendrils, adaxial surface of lamina, flowers, and sometimes adaxial surface of bracts. Trichomes 0.05–0.20(–0.25) mm, erect and straight or curved. Stems subterete to obtusely subangular, striate, apparently not hollow. Stipules (10–)13–18(–22) × 0.4–1.0 mm, linear-narrowly oblanceolate (or linear-triangular to linear-narrowly lanceolate), long-attenuate, tardily deciduous, glandular-denticulate; petioles 2(–4)-glandular  $\frac{1}{4}$ – $\frac{3}{4}$  the distance to the apex (or if 4-glandular, rarely 1 pair near the apex), the nectaries sessile or up to 1 × (0.7–)1–2.2 mm, (crateriform to) patelliform; laminae 10–13 × 9–14 cm, glandular-serrate(-serrulate), not variegated, glabrous adaxially except the primary veins puberulent at least half their length, 3-lobed for 0.4–0.7 the distance to the base, the lobes lanceolate to narrowly ovate-oblong, acuminate to short-cau-

date; laminar nectaries marginal, 2–5 slightly enlarged teeth borne in each lobe sinus, enlarged teeth absent at base of lamina. Prophylls of vegetative ramifying bud 2, 1–2 mm long, lanceolate, equal or one smaller. Peduncle 1 per node, 1.5–4(–5.0) cm, uniflorous; bracts 4.8–6.6 × 2.0–3.4 cm, valvate in bud, free to the base, ovate-elliptic, conspicuously 2–4(–6)-glandular at the margin basally, otherwise entire or the basal  $\frac{1}{2}$  obscurely glandular-denticulate, acuminate to long-acuminate, yellow green, deciduous in fruit, adaxial surface puberulent or glabrous with puberulent main veins and a narrow band of tomentum along margin, the venation basally acrodromous with prominent intramarginal veins. Perianth white, longest coronal filaments purplish to violet, white at the apex, banded white basally; floral stipe ca. 12–14 mm (to 20 mm in fruit); hypanthium ca. 5–6 mm long, ca. 13–14 mm diam., puberulent; sepals 24–34 × 7–12 mm, lanceolate-triangular, puberulent, sometimes only sparsely so, subapically with an arista (8–)10–18 mm; petals 24–34 × 6–9 mm, oblong-lanceolate; coronal filaments in 6–8 series, the 2 outermost similar, often apically tortuous, the outer 26–32 mm, the second series broader at their base and ca. 3–6 mm shorter, the next (3–)4–5 series tuberculate or 1–5(–7) mm, the innermost series 6–10 mm, banded purple and white; operculum basally connate for 2–4.5 mm, membranous, the margin erose or short-fimbriate and often slightly plicate, with a subapical and slightly deflexed series of fimbriae or filaments 1–3(–5) mm long; nectar ring (annulus) present in the middle of the nectary; limen (disk) ca. 6–8 mm diam. around the widely broadened base of the androgynophore, ca. 3 mm above the floor of the nectary; staminal filaments connate 10–13 mm along androgynophore, the free portions 8–9 mm, glabrous; anthers 10–12 mm; ovary 5–6.5 × 2–3.2 mm, narrowly ovoid-ellipsoid, glabrous (rarely sparsely puberulent); styles 10–11 mm including stigmas, glabrous; stigmas 4 mm wide, deeply bilobed. Fruit 7.5–9 × 4.5–5 cm, ellipsoid, greenish

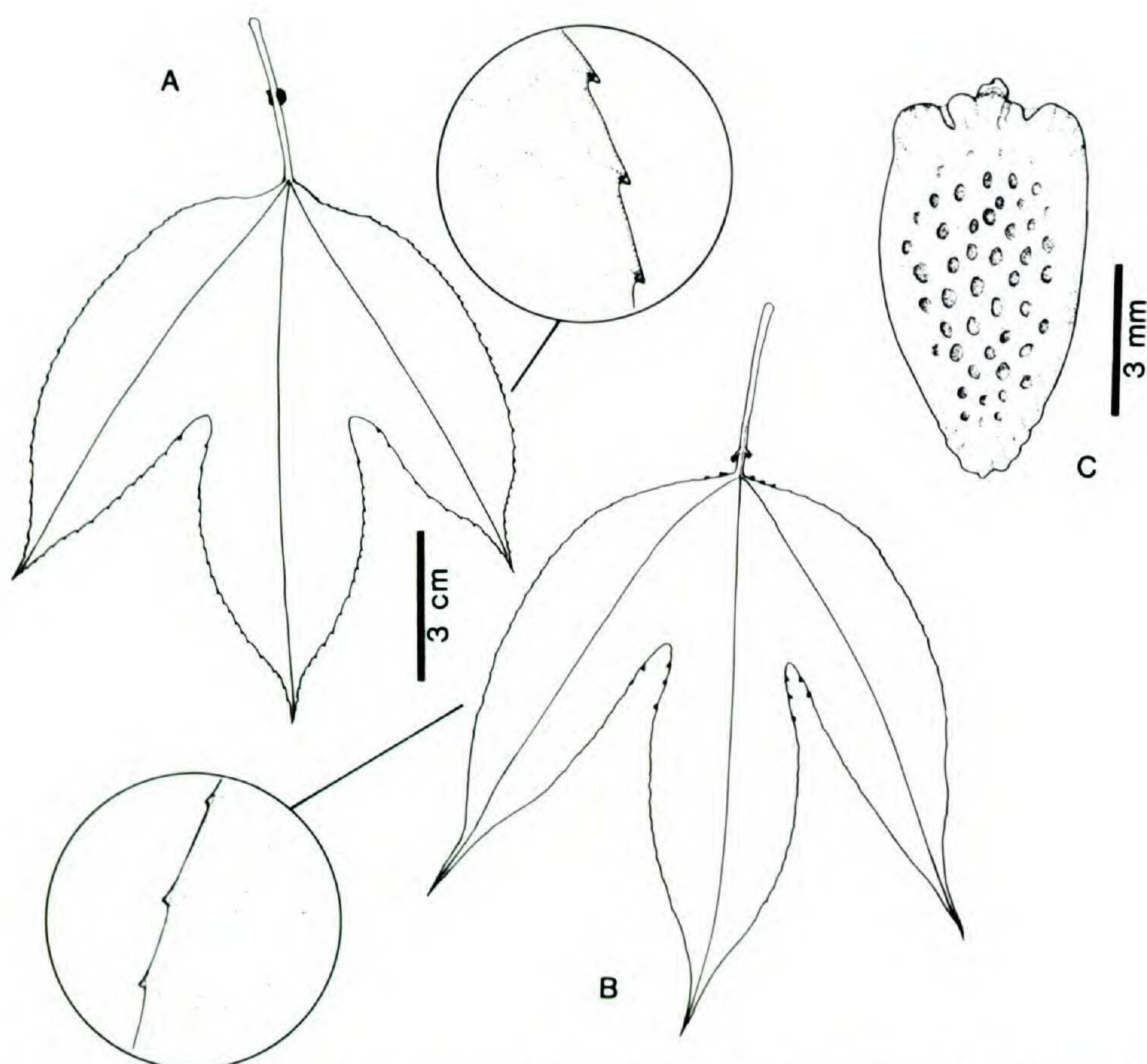


FIGURE 1.—A. Leaf of *Passiflora mayarum* with detail of marginal teeth (Téllez & Cabrera 2429).—B. Leaf of *P. prolata* with detail of marginal teeth (MacDougal 596).—C. Seed of *P. mayarum* (Téllez & Cabrera 2429).

yellow to yellow, estipitate; arils longer than the seeds, color and flavor unknown; seeds 7.2–8.0 mm long  $\times$  4.0–4.5 mm wide  $\times$  1.9 mm thick, obovate, strongly compressed, nearly bilaterally symmetric with the chalazal end squared and shallowly 3-dentate, brown, reticulate-foveate with 35–46 foveae.

*Habitat and distribution.* This species grows in the Caribbean lowlands of northern Guatemala,

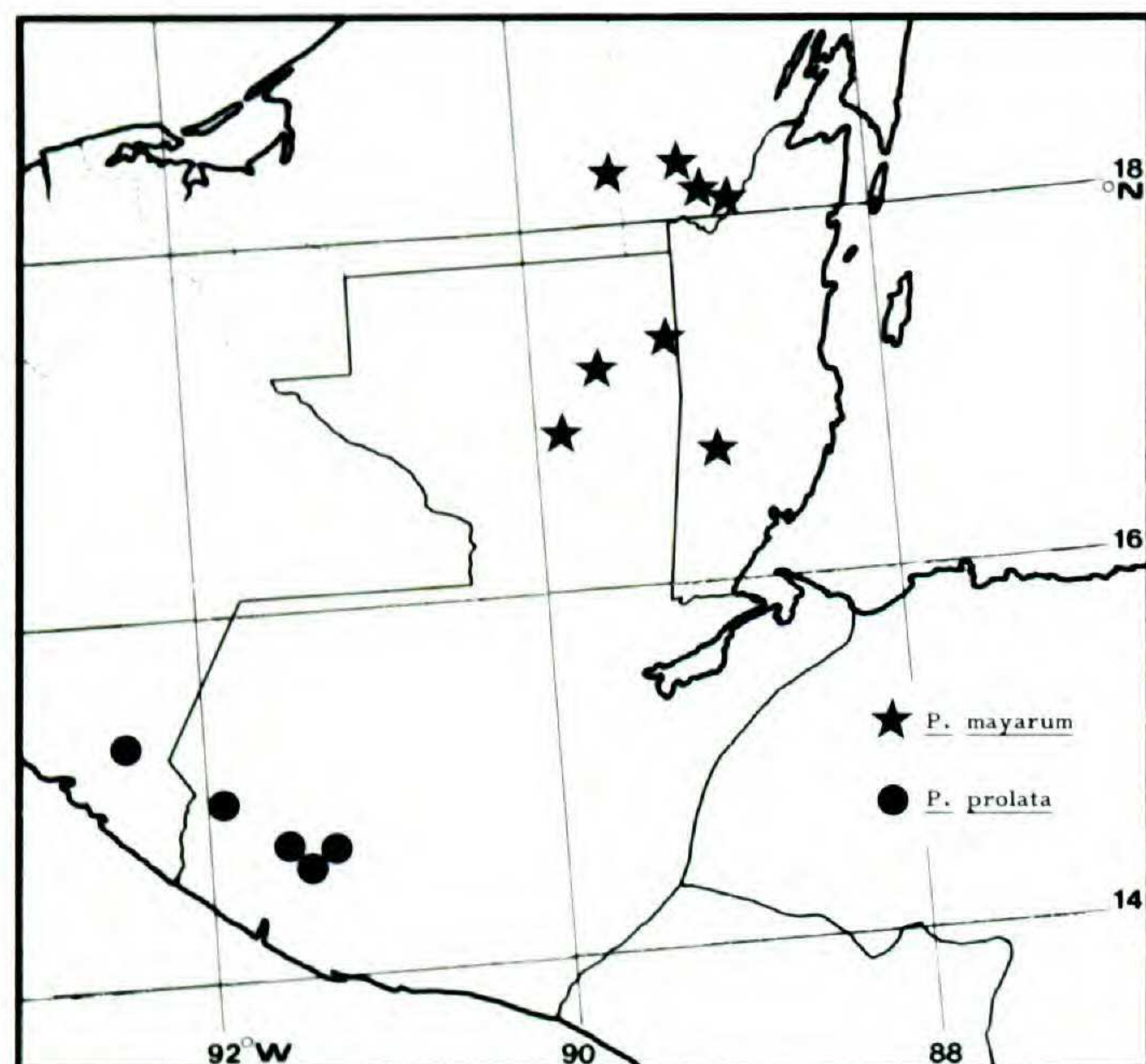


FIGURE 2. Map of Guatemala, Belize, and neighboring countries showing distributions of *Passiflora mayarum* and *P. prolata*.

western Belize, and the southern part of the Yucatán Peninsula (Fig. 2). The collections come from elevations of 20–250 m, except for two collections from one station at 550 m in Belize. The habitat is usually open or partially open vegetation. Although the information is not present on the specimen's label, Bartlett (1935: 20) stated that his collection 12840 was collected in the wooded swamp vegetation called *escobal*, which is a vegetation type dominated by the *escoba* palm, *Cryosophila*. This edaphic climax occurs in the Petén and Yucatán on wet soil surrounding water holes (“aguadas”) and as the transitional zone between the inundated areas of the wooded swamps (“bajos”) and the well-drained “high bush” uplands (Bartlett, 1935; Lundell, 1937). However, most of the collections are from disturbed and more well-drained habitats, namely, roadsides and secondary areas in low forest, *selva mediana subperennifolia*, or *selva alta subperennifolia* (Rzedowski, 1978).

*Phenology.* The few collections known suggest that reproduction occurs primarily during the wet season from April through November. One sheet, however, was collected in flower at the end of December. Although the type has nearly mature fruit, fully mature fruit and seeds are known only from Téllez & Cabrera 2429.

*Vernacular name.* “Granadilla” (Tún O. 372).

*Additional specimens examined.* MEXICO. CAMPECHE: 30 km al S de Xpujil, 22 Apr. 1982, *Cabrera & Cabrera 2482* (MEXU, MO). QUINTANA ROO: 8 km al S de Tres Garantias, sobre el camino a Tomás Garrido, 22 Dec. 1982, *Cabrera & Cabrera 4174* (MEXU, MO); 24 km al N de La Unión, 7 May 1980, *Téllez & Cabrera 2100* (MEXU, MO); 15 km al S de Ejido Laguna OM, 8 June 1980, *Téllez & Cabrera 2429* (MEXU, MO). BELIZE. CAYO: between Millionario and Cuevas, 30 May 1973, *Dwyer 10823* (MO); vic. Millionario, 1,800 ft., 30 May 1973, *A. Gentry 7733* (MO). GUATEMALA. PETÉN: Dos Arroyos to Yal'och, 2 May 1931, *Bartlett 12840* (MICH, US—fragment; photos: F, NY, US); ca. 5 mi. S of Tikal National Park, 19 June 1973, *Dwyer 11269* (MEXU, MO); S of Tikal National Park, 19 June 1973, *A. Gentry 8338* (MO—2 sheets, US); camino de El Remate en el Km 59, Parque Nacional de Tikal, 24 Oct. 1969, *Tún O. 372* (F, NY, US); Santa Elena, en el camino para San Andrés, Km 4, lado saliente, 4 Oct. 1969, *Tún O. 1374* (F).

*Passiflora mayarum* is most similar to and is undoubtedly very closely related to *P. prolata* from the premontane to montane broad-leaved forests of the Pacific watershed of Guatemala and Chiapas, Mexico. Except for the vestiture, the two have similar leaves and nearly identical glandular bracts. At the time of his 1938 monograph, Killip knew *Passiflora prolata* only from the type. He knew the related species newly described here from a single collection by Bartlett (12840). He had identified that sheet as *P. prolata* (Killip, 1936), but later expressed some misgivings. In his monograph (1938: 389) he stated, "I am referring the Bartlett collection to *P. prolata* with some hesitation, as the stem and under surface of the leaves are puberulent and the petiolar glands are not quite as in the type. It comes, moreover, from the lowlands." The more recent collections of both species confirm that the two are separate morphologically and ecologically. Neither fruit nor seeds are known from *P. prolata*, so it is impossible to compare the two species on these points. They may be distinguished by the following key.

- 1a. Stems and leaves glabrous except for slight pubescence or puberulence at the nodes, on the sides of the adaxial primary laminar veins, and sometimes on the petiole. Stipules 7–10 mm long, acuminate. Petioles glandular in the distal half, the glands 0.3–0.8 mm diam. and usually longer than wide. Laminar lobes conspicuously long-acuminate; laminar margin serrulate, often only denticulate apically, usually nectariferous at the junction of the petiole. Bracts glabrous abaxially. Hypanthium and sepals glabrous. Habitat elevation 700–2,000 m ..... *P. prolata*
- 1b. Stems and leaves puberulent except the lamina glabrous adaxially with the primary veins puberulent. Stipules 10–22 mm long, long-attenuate. Petioles glandular at a variable position, the glands 0.7–2.2 mm diam. and wider than

long. Laminar lobes acuminate to short-caudate; laminar margin uniformly serrate (to serrulate), not nectariferous at the junction of the petiole. Bracts puberulent abaxially. Hypanthium puberulent, sepals puberulent or only sparsely so. Habitat elevation 20–550 m ..... *P. mayarum*

Not having seen the type of *P. prolata* (*Lehmann 1630*—G-BOIS), I have relied on the protologue and five more recent collections, including one of my own, that match the protologue. Three of these collections were identified as *P. prolata* by Killip (who saw the type), and one was collected within 30 km of the type locality at a similar elevation. The flowers of *P. prolata* and *P. mayarum* appear to be rather similar, apparently borne above the horizontal plane, with two prominent series of purplish outer coronal filaments, several reduced intermediate series, and a well-developed inclined inner series. The operculum in both is similar, although that of *P. mayarum* has shorter subapical filaments. I have seen the flower of *P. prolata* only from *Matuda 16479* (F), in which the intermediate coronal series are reduced to variably expressed series of tubercles. It is not possible to determine clearly the relative length of the two outer series except to say that they are roughly similar in this poorly pressed specimen. Given the lack of comparative reproductive material and the coronal variation that occurs within related species, I have for now distinguished the two species mainly by vegetative characteristics.

The leaves of *P. mayarum* tend to be less deeply lobed, but there is considerable overlap with *P. prolata*. The quality and quantity of the indument differ: the few trichomes that occur on the leaves and nodes of *P. prolata* are ca. 0.2–0.4 mm instead of 0.05–0.25 mm long. Despite the variation in their vestiture, the bracts of both species always have a narrow band of dense tomentum along the margin adaxially. The trichomes are crispate, and those of adjacent bracts are interlocked during the development of the bud, keeping the bracts valvate. This marginal band of crispate tomentum occurs in number of species of *Passiflora* and is correlated with foliaceous valvate bracts. The ovary of *P. mayarum* is glabrous in all collections examined except *Tún O. 1374*, in which it is sparsely puberulent.

Some of the Mexican collections of the new species were distributed as *P. platyloba* Killip and are cited as such in Sousa & Cabrera (1983).

*Passiflora mayarum* and *P. prolata* belong to subgenus *Passiflora*, where they share characteristics with species that Killip (1938) included in his informal "series" *Serratifoliae* and *Incarnatae*.

Killip placed *P. prolata* next to *P. incarnata* L. as one of six species in *Incarinatae*, which was distinguished within subgenus *Passiflora* (as subgenus "*Granadilla*") as having unwinged stems, free bracts, narrow stipules, lobed leaves, eglandular sepals, filamentous corona in more than two series, petiolar glands present, and denticulate or fimbriate operculum. That delineation is fraught with difficulties since most of those character states are undoubtedly plesiomorphic for the subgenus. Except for the lobed leaves, it also fits the species put in the *Serratifoliae* group. An understanding of the relationships among these species and the granadillas as a whole awaits a revision of subgenus *Passiflora*. *Passiflora mayarum* is probably genetically close enough to the commercially important *P. edulis* Sims to warrant investigation into using it as a rootstock or as a source of genetic improvement for the commercial passionfruit. It is especially notable that *P. mayarum* has been collected growing in warm wet soil, the kind of conditions that induce fungus-related failure of the commercial crop.

The epithet *mayarum* refers to the native distribution of this species, centered in the heart of the Mayan Old Empire.

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